



EFFECT OF PIGMENTS IN PROPERTIES OF EXTRUDED POLYMER/NATURAL FIBER FOAMS

Diego Andrés Domínguez C., Jorge Alberto Medina P.

Centro de Investigación en Procesamiento de Polímeros, Universidad de los Andes

d-doming@uniandes.edu.co

This study analyses the effect of coloring on polymer/natural fiber composite foams. They were made by an extrusion process using PVC and coffee husk, with azodicarbonamide as foaming agent. The effect of common inorganic pigments like titanium dioxide and carbon black on properties like density, cell diameter, compression strength and color were analyzed at various levels. Organic pigments based in copper phthalocyanines and azo condensation were also studied. This topic and the use of coffee husk as reinforcement fiber has not been discussed in literature before. In previous studies (not published), coffee husk showed its usefulness in this application. Additionally, it is an economic material (0.037USD/kg) because it is waste from agriculture industry with an availability of 134000 tons per year, just in Colombia. It was found that pigments increase the processing torque. In spite of their role as nucleating agents, they increased the cell coalescence in the middle of extruded profile and the profile's density. Mechanical properties were not notably affected. The point where an increase in pigment amount yields no significant color change was also determined.